

Code No. : 30799 E Sub. Code : EFMI 11

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Microbiology

Foundation Course — BASIC MICROBIOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Flagella in bacteria enable bacteria to
- Reproduce
 - Locomotion
 - Adhere to tissue surfaces
 - Thrive in the nutrient agar

2. Which of the following bacterial species divides by fragmentation?

- Bacillus subtilis*
- Streptococcus sp*
- Rhodospseudomonas acidophila*
- Nocardia sp.*

3. The vitamin whose content increases the conversion of milk into curd by lactic acid bacteria is

- Vitamin C
- Vitamin D
- Vitamin B12
- Vitamin E

4. Micro organisms are used during which stage of purification of the sewage water?

- Primary treatment
- Secondary treatment
- Both (a) and (b)
- None of the above

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5. According to Bergey's manual of systematic bacteriology, prokaryotes that lack a cell wall belong to the group?

- Gracilicutes
- Firmicutes
- Tenericutes
- Mendosicutes

6. What is the purpose of Taxonomy?

- Explain the origin of life
- Identification of unknown species
- Know their main habitat
- To search the history of evolution

7. Which of the following is the method to determine viable count?

- Plate count technique
- Breed method
- Turbidometry
- Proportional count technique

8. What type of microscope is usually necessary for observing viruses?

- Dark field microscope
- Phase contrast microscope
- Electron microscope
- Compound microscope

9. The main products produced by microorganisms during fermentation are

- Ethanol and lactic acid
- Ethanol and uric acid
- Amino acid and lactic acid
- Ethanol or uric acid

10. Which of the following is the leading micro organism in soil?

- Actinomycetes
- Bacteria
- Fungi
- Algae

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain basic cell structure and shapes of bacteria with examples.

Or

- (b) Write about the microbial cell division and its types.

12. (a) Explain the role of microbes in environment.

Or

- (b) Write about the applications of microbes in biotechnology.

13. (a) What is phylogenetic classification? Explain.

Or

(b) Explain the rules for the nomenclature of micro organisms.

14. (a) What is culture media? Give examples.

Or

(b) Explain the principle and structure of compound microscope.

15. (a) Write about the important microbes in soil.

Or

(b) Give a notes on aero microbiology.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Define prokaryotes. And Explain their structure and characteristics.

Or

(b) Elaborate the differences between prokaryotes and eukaryotes.

17. (a) Write about the applications of microbes in agriculture.

Or

(b) Explain the applications of microbes in food and beverage industry.

18. (a) Briefly explain the classification of bacteria according to Bergey's manual.

Or

(b) Explain Whitaker's five kingdom concept of classification.

19. (a) Explain in detail the steps of Gram's staining.

Or

(b) Briefly explain the following (i) Acid fast staining (ii) Capsule staining.

20. (a) Elaborate the importance of microbes in water.

Or

(b) Write an essay on the link between food and microbes.